Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules to Create a Low	)	ET Docket No. 02-98
Frequency Allocation for the Amateur	)	RM-9404
Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Regarding an	)	RM-10209
Allocation of a Band near 5 MHz for the	)	
Amateur Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Concerning the	)	RM-9949
Use of the 2400-2402 MHz Band by the	)	
Amateur and Amateur-Satellite Services	)	

REPLY COMMENTS OF LINCOLN ELECTRIC SYSTEM

The City of Lincoln, Nebraska, d/b/a Lincoln Electric System, hereby submits Reply Comments regarding the *Notice of Proposed Rulemaking* in the above-captioned proceeding.[1]

I. INTRODUCTION

Lincoln Electric System (LES) is a municipal utility that provides electricity to approximately 115,000 customers in a service area that covers about 195 square miles in and around the City of Lincoln and Village of Waverly, Nebraska.

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[1] Amendment of Parts 2 and 97 of the Commission's Rules to Create a Low Frequency Allocation for the Amateur Radio Service, *Notice of Proposed Rulemaking*, ET Docket No. 02-98. FCC 02-136 (released May 15, 2002) (the "Notice", "NPRM").

LES operates high voltage transmission lines at various voltages: 345 kV, 161 kV, and 115 kV. Transmission lines carry electric power from generating stations to substations, as well as between substations. These transmission lines are part of a regional network of transmission lines commonly known as "the power grid." LES' generating resources are spread across a fairly wide geographic area from Wyoming to Iowa. In addition, it also makes a number of regional wholesale power purchases, making LES very dependent on the regional transmission system in providing its customers with reliable electric service.

The allocations proposed in the NPRM could result in interference with power line carrier (PLC) frequencies on at least two of LES' transmission lines, thus compromising the integrity, security, and reliability of its transmission system. Power failures can have a catastrophic impact upon the public health, safety and welfare of a community and affect neighboring power company systems in the area.

LES relies heavily on PLC frequencies to ensure the safe, effective, and reliable operation of its transmission lines. PLC systems use the transmission lines as the propagation medium for the radio frequency signals with the PLC transmitters and receivers being coupled to the power transmission lines by means of coupling capacitors, wave traps, and matching networks. PLC systems operate between 10 and 490 kHz using low power transmitters. Both government and non-government PLC systems operate in this band. Non-government PLC systems operate on an

unlicensed basis as restricted radiation devices pursuant to 47 C.F.R. §15.113. Government PLC systems operate under Chapter 7 of the NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management.

II. A SECONDARY ALLOCATION FOR AMATEUR OPERATIONS IN THE 135.7 KHZ - 137.8 KHZ BAND WOULD THREATEN RELIABLE OPERATION OF ELECTRIC UTILITY PLC SYSTEMS

LES opposes the Commission's proposal to allocate the 135.7 kHz - 137.8 kHz band for amateur operations on a secondary basis. The proposed allocation increases the possibility and probability of interference to PLC systems from amateur operations broadcasting in this band. Amateur operations are both unpredictable and uncoordinated.

LES uses a 134 kHz PLC frequency on one of its 345 kV transmission lines for direct transfer trip relaying that could easily be subjected to interference due to its proximity to the 135.7 - 137.8 kHz band. Amateurs operating in this band theoretically could either unintentionally cause a transmission line to trip off or prevent the transmission line from properly tripping when a fault occurs. Either occurrence would potentially pose a threat to public health, safety and welfare.

PLC systems use a frequency for a blocking scheme to signal the relays to trip, and interference from amateur operations could be interpreted by the PLC system as a frequency for blocking. This would cause instability on the transmission lines, with widespread outages a potential consequence. Such outages would have a significant economic impact on the utilities as well as the customers impacted by such outages. LES has a number of energy sensitive industrial customers that

depend on constant electric power. Those businesses would be detrimentally impacted by these transmission outages. This potential for interference should be avoided, particularly at a time when, in the wake of the events of September 11, 2001, we are in a process of increasing the protection of our critical infrastructure systems, including transmission line PLC systems.

The Commission has attempted in the NPRM to address the interference issue by proposing technical rules to minimize the impact to PLC systems from amateur operations. The proposed technical rules are inadequate to effectively address the potential for interference to utility PLC systems. Power limits are meaningless if they are not coupled with antenna size or design limits that protect PLC systems from harmful interference. The technical rules should focus on requirements on amateurs to ensure that they do not operate in such proximity as to cause harmful interference to PLC systems. The integrity of the PLC systems as part of a critical infrastructure must be of paramount concern.

If the NPRM were adopted as proposed, LES would be forced either to retune and only if possible, re-coordinate with other utilities its PLC systems, if possible, or to convert to an entirely different protective relaying system. In either case, the capital cost and recurring expense associated with replacement of PLC systems would be significant for LES and would ultimately be paid by its customers–the ratepayers. The risks and potential costs to the public of granting this allocation far outweigh the benefit to the amateur operators.

III. THE COMMISSION SHOULD NOT PROVIDE PUBLIC ACCESS TO THE PLC DATABASE

The Commission has suggested that spectra in both the 135.7 - 137.8 kHz and 160-190 kHz bands could be used more effectively if potential operators knew where other users of the spectrum were located and could avoid them. Such access should not be granted as no compelling public purpose for granting such access has been set forth.

Conversely, there is a significant compelling public purpose for denying access to the UTC's PLC database. Security of the data and integrity of the transmission grid necessitate denial of access to the database. Allowing access to the database makes it much easier for those with nefarious intentions for our critical infrastructure. Granting access to the database will do little toward preventing interference because the database will only provide partial information due to the fact that the database includes geographic locations of PLC transmitters and receivers, but no information regarding the routing of the transmission lines carrying the signals to the receivers.

IV. CONCLUSION

LES urges the Commission to protect the reliability, security, and integrity of the PLC systems and to decline the proposal to adopt a secondary allocation for amateur operations in the 135.7 - 137.8 kHz band. The Commission must not compromise the integrity of one of our critical infrastructure systems. There is no benefit to the general public to be derived from the proposed allocation, while the harm to the public could be substantial.

Respectfully submitted,
Lincoln Electric System

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